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10/678,705	10/03/2003	Ramesh Durairaj	111-124	9889

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Anderson Gorecki & Manaras, LLP
Attn: John C. Gorecki
P.O BOX 553
CARLISLE, MA 01741

EXAMINER	
CHEA, PHILIP J	

ART UNIT	PAPER NUMBER
2453	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

john@gorecki.us
jgorecki@smmalaw.com
officeadmin@smmalaw.com

Office Action Summary	Application No.	Applicant(s)	
	10/678,705	DURAIRAJ ET AL.	
	Examiner	Art Unit	
	PHILIP J. CHEA	2453	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 February 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This Office Action is in response to an Amendment filed February 11, 2009. Claims 1-22 are currently pending. Any rejection not set forth below has been overcome by the current Amendment.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 11-15,17-19,21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Largman et al. (US 7,137,034), herein referred to as Largman, and further in view of Kwok et al. (US 6,535,924), herein referred to as Kwok.

As per claim 11, Largman discloses an intelligent management interface for a router, the router including at least one router processor controlling operation of the router in normal operation (see column 8, lines 53-54, *where computer connected to the network is considered the router*) as claimed, comprising:

at least one intelligent management interface processor supporting an independent operating environment for the intelligent management interface which is separate from the operating environment supported by the at least one router processor and able to boot separate from a boot process of the at least one router processor of the router, the independent operating environment enabling the intelligent management interface to be active during the boot process of the at least one router processor of the router (see column 5, lines 39-55, *describing how an intelligent interface can be active during a boot process of computer [1] (i.e. a computer connected to the network (*see column 8, lines 53-54) *is considered the router) by switching which drive the computer boots from automatically repairing the boot drive of the computer and Fig. 1, showing how the operating environment of the intelligent management interface is separate by having its own microcontroller [1A] and power supply [1B] which is separate from*

router processor [10] and column 4, lines 8-13, describing how the power supply [1B] can power the controller [1A] independently implying that the boot process of the controller [1A] can be able to boot separate since it has its own power supply and is powered on (booted) independently); and

intelligence enabling the intelligent management interface to take actions on the router to control the boot process of the at least one router processor (see column 5, lines 56-63, *where the action taking place is a template drive repairing the boot drive of computer [1], where repairing the boot drive controls the boot process of the router processor)*.

Although the system disclosed by Largman shows substantial features of the claimed invention (discussed above), it fails to disclose a router including physical interfaces and a switch fabric to receive data from the network, switch the data between the physical interfaces, and output data back onto the network.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Largman, as evidenced by Kwok.

In an analogous art, Kwok discloses a method for performing a in-service software upgrade to a data router by receiving an software upgrade from a source node (see Abstract). Kwok further discloses the need to upgrade the router without having to take the router off-line (see column 2, lines 23-27). Largman further discloses the router having separate control components that can be individually upgraded and booted (see column 3, lines 55-63 and column 7, lines 27-37). Largman further discloses the router including physical interfaces and a switch fabric to receive data from the network, switch the data between the physical interfaces, and output data back onto the network (see Fig. 2 and column 5, lines 33-40).

Given the teaching of Kwok, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Largman by employing a router, such as disclosed by Kwok, in order to provided software updates to routers without having to take them offline.

As per claim 12, Largman further discloses that the intelligence performs diagnostic checks on the router (see column 6, lines 39-43).

As per claim 13, Largman further discloses that the intelligence uploads files to the router (see column 5, lines 56-63, *where the files uploaded include a new operating system, and application files being uploaded to the computer (i.e. router)*).

As per claim 14, Largman further discloses that he intelligence causes a new software image to be stored on the intelligent management interface, and to cause the router to be restarted from the new software image (see column 27, lines 34-37 and lines 54-60, *describing how the master template can be updated (i.e. the data store used by the intelligent management interface for repairs) where the master template provides the data store template [14] with the copy that is used to repair data store [12] during a reboot of the router* see column 5, lines 45-63*)*.

As per claim 15, Largman further discloses that the intelligence controls the router before, during, and after a router boot process (see column 5, lines 45-56).

As per claim 17, Largman further discloses that the intelligence implements a Universal Serial Bus (USB) stack to enable the intelligent management interface to communication over an exterior interface utilizing at least one of the USB standards (see column 19, lines 6-10).

As per claim 18, Largman in view of Kwok further discloses a method of managing a switch, as claimed, comprising:

assessing a USB port (see Largman column 19, lines 6-10, *describing a computing device managed by an externally located device coupled through USB*) on a switch (see Kwok column 2, lines 23-27, *showing why it would be obvious to have a similar on the fly upgrading on a switch*); and

transferring management information over the USB port (see Largman column 19, lines 6-10, *where managing a repair process on the computing device implies transferring management information such as initiating the repair process on the computer device*).

As per claim 19, Largman further discloses that the management information comprises a software image to be loaded onto the switch (see column 5, lines 56-63).

As per claim 21, Largman further discloses that the new software image is downloaded from a centralized location accessible to multiple network elements (see column 16, lines 24-28), and wherein the new software image upgrades a previous software with new software containing new features (see

column 27, lines 54-60, *describing how a master template maybe updated (i.e. new software with new features)* and column 27, lines 49-53, *where the master template is used to restore the user data storage device, but if the master template was updated then the restoration would also include the new updated software*).

As per claim 22, Largman further discloses that the new software image is downloaded from a centralized location accessible to multiple network elements (see column 16, lines 24-28), and where the new software image is configured to upgrade a previous software with a corrected version of the existing software (see column 5, lines 56-63).

3. Claims 1-2,4-10,16,20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Largman et al. (US 7,137,034), herein referred to as Largman, and further in view of Agnihotri et al. (US 7,137,034), herein referred to as Agnihotri.

As per claim 1, Largman discloses a network element, as claimed, comprising:

a first processor supporting a first processing environment (see Fig. 1, *shows [CPU 10], supporting a processing environment including volatile memory [11] and peripheral controller [17] and boot data store [12] and* column 4, lines 39-44 *describing the first processing environment computer [1]*);

an intelligent interface between the first processing environment and a management device external to the network element (see column 19, lines 6-10, *where a repair process may be initiated or managed by an externally located device, and the repair process is performed by the intelligent interface discussed below implying that the intelligent interface is between the management device and computer [1] (i.e. first processing environment)*), said intelligent interface comprising a second processor supporting a second processing environment independent of the first processing environment (see Fig. 1, *showing how switches [19] and [13] provide an interface that has a microcontroller [1A] (i.e. second processor) supporting the environment of 1Z and template data store [14] and* see column 4, lines 48-52, *describing how the data store [12] may be made accessible to computer [1] and data store [14] inaccessible to computer [1] implying two separate independent environments)*, the second processor being able to boot independent of a boot process of the first processing environment (see column 4, lines 8-13, *showing that*

the power supply of the microcontroller [1A] is independent of the power supply of the computer [1] implying that the microcontroller (second processing environment) is powered on (booted) independent of the computer [1] (first processing environment));

an internal interface enabling the first processing environment to be accessed from the second processing environment (see column 5, lines 39-55, *describing how an internal interface allows the second processing environment including the template data store [14] to copy software to the first processing environment including boot data store [12] by switching to repair mode and having the computer [1] boot from the template boot drive)*.

Although the system disclosed by Largman shows substantial features of the claimed invention (discussed above), it fails to disclose enabling the second processing environment to be accessed from the management device external to the network element.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Largman, as evidenced by Agnihotri.

In an analogous art, Agnihotri discloses integrating device management applications into a host system of a network for centralized remote device management of remote network devices on network and a discovery interface for identifying remote network devices on a network (see Abstract). Agnihotri further discloses a management device external to a network element (see Fig. 1, *showing a management device [12] external to a network element [16])* that provides an processing environment to be accessed from the management device external to the network element (see column 1, lines 45-51 and lines 59-63). *Given that the intelligent interface provides the switching between data store [12] and [14] to copy software to the first processing environment as discussed above, it would be obvious that the intelligent interface would be between the first processing environment and the management device in order to allow the management device to command the second processing environment of the intelligent interface by activating the switches to perform the copying and booting.*

Given the teaching of Agnihotri, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Largman by employing an external management

device, such as disclosed by Agnihotri, in order to perform a remote function such as rebooting remote PCs on the network or monitor PC heath (see Agnihotri column 1, lines 60-63).

Although the system disclosed by Largman in view of Agnihotri shows substantial features of the claimed invention (discussed above), it fails to disclose a router.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Largman in view of Agnihotri, as evidenced by Kwok.

In an analogous art, Kwok discloses a method for performing a in-service software upgrade to a data router by receiving an software upgrade from a source node (see Abstract). Kwok further discloses the need to upgrade the router without having to take the router off-line (see column 2, lines 23-27). Largman in view of Agnihotri further discloses the router having separate control components that can be individually upgraded and booted (see column 3, lines 55-63 and column 7, lines 27-37).

Given the teaching of Kwok, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Largman in view of Agnihotri by employing a router, such as disclosed by Kwok, in order to provided software updates to routers without having to take them offline.

As per claim 2, Kwok further discloses a plurality of physical interfaces for receiving data from the network and assembling packets of data, at least one network processor for processing the packets of data, a switch fabric for switching the packets of data between physical interfaces, so that the router may receive data from the network, assemble the data into packets, process the packets, switch the packets, and then output at least some of the packets of data back onto the network (see Fig. 2 and column 5, lines 33-40).

As per claim 4, Largman further discloses that the second processor comprises control logic enables a new software image to be loaded onto the intelligent interface, said new software image to be used to configure the first processing environment (see column 27, lines 34-37 and lines 54-60, *where the master template provides the data store template [14] with the copy that is used to repair data store [12]*).

As per claim 5, Largman further discloses that the intelligent interface comprises a memory, and wherein the new software image is stored in said memory (see column 27, lines 54-60, *where updating the master template inherently includes memory to store the master template)*.

As per claim 6, Agnihotri further discloses that the second processor comprises control logic enables information related to an operational condition of the first processor to be collected over the internal interface and transmitted over the external interface (see column 1, lines 60-64).

As per claim 7, Agnihotri further discloses that the operational condition comprises at least one of Management Information Base values, logging information, and operational parameters (see column 1, lines 60-64).

As per claim 8, Largman further discloses that the second processor comprises control logic enabling diagnostic checks to be run on the first processing environment (see column 6, lines 39-43).

As per claim 9, Largman further discloses that the second processor comprises control logic enabling modifications to be made to the first processing environment over the internal interface (see column 6, lines 39-43).

As per claim 10, Largman further discloses that the external interface operates utilizing at least one of the Universal Serial Bus (USB) standards (see column 19, lines 6-10).

As per claim 16, Agnihotri further discloses enabling at least one of files and MIB information to be transmitted from the intelligent management interface to enable a network manager to manage the network element during at least one of a network element boot process and in a network element run-time environment (see column 15, lines 53-63, *describing setting traps to monitor a network devices run-time environment*).

As per claim 20, Agnihotri further discloses that the management information comprises Management Information Base (MIB) values indicative of at least one of performance by the network element and a state of operation of the network element (see column 15, lines 53-63).

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Largman in view of Agnihotri in view of Kwok as applied to claim 1 above, and further in view of Mumolo et al. ("A Hard Real-Time Kernel for Motorola Microcontrollers").

Although the system disclosed by Largman shows that the first processing environment comprises a first kernel (see column 3, lines 43-57, *where an OS implies a kernel*), and the second processing environment includes a microcontroller (see Fig. 1 [1A]), it fails to disclose that the second processing environment comprises a second kernel.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Largman in view of Agnihotri in view of Kwok, as evidenced by Mumolo.

In an analogous art, Mumolo discloses a real-time kernel for running embedded applications on a microcontroller and managing real-time tasks as well as non real-time tasks (see Abstract).

Given the teaching of Mumolo, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Largman in view of Agnihotri in view of Kwok by employing a kernel for the second processing environment, such as disclosed by Mumolo, in order to run the applications involved with copying data from template data store [14] to data store [12] of the system described by Largman.

Response to Arguments

5. Applicant's arguments with respect to claims 1-22 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PHILIP J. CHEA whose telephone number is (571)272-3951. The examiner can normally be reached on M-F 6:30-4:00 (1st Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on 571-272-4001. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Philip J Chea
Examiner
Art Unit 2453

/Philip J Chea/
Examiner, Art Unit 2453
4/16/09